

Amendments to the Claims

The following Listing of Claims replaces all prior versions, and listings, of claims in the application.

Listing of Claims:

Claim 1 (currently amended): An audio processing method, comprising:
identifying audio summaries of respective audio pieces, wherein each of the audio summaries comprises digital content summarizing at least a portion of the respective audio piece,
and the identifying comprises for each of the audio pieces
selecting constituent segments of the audio piece as its respective ones of the
audio summaries and
ranking its audio summaries into different levels of a respective audio summary
hierarchy;
determining transition audio segments each comprising a form of audio content that is different from the audio summaries and distinguishes the transition audio segment from the audio summaries;
concatenating the transition audio segments and ones of the audio summaries ranked at a
selected level of the audio summary hierarchies and the transition audio segments into a
sequence in which at least one of the transition audio segments is between successive ones of the audio summaries; and
rendering the sequence.

Claim 2 (original): The method of claim 1, wherein identical transition audio segments are rendered between pairs of sequential audio summaries.

Claim 3 (previously presented): An audio processing method, comprising:
sequentially rendering audio summaries and transition audio segments with at least one transition audio segment rendered between each pair of sequential audio summaries, wherein each audio summary comprises digital content summarizing at least a portion of a respective

associated audio piece, wherein identical transition audio segments are rendered between pairs of sequential audio summaries and each identical transition audio segment corresponds to a Gabor function in a time domain representation.

Claim 4 (currently amended): The method of claim 31, wherein each of the transition audio segments corresponds to a Gabor function in a time domain representation, and each of the Gabor functions has a respective center frequency substantially corresponding to a center pitch of an adjacent one of the audio summary summaries in the sequence.

Claim 5 (original): The method of claim 1, wherein the audio summaries and the interleaved transition audio segments are rendered consecutively.

Claim 6 (original): The method of claim 1, wherein each audio summary is a representative segment of a respective associated audio piece.

Claim 7 (original): The method of claim 1, further comprising classifying audio pieces into categories in response to user input received during rendering of the associated audio summaries.

Claim 8 (original): The method of claim 7, further comprising building a playlist based on categories assigned to a set of audio pieces.

Claim 9 (previously presented): The method of claim 1, wherein at least one audio summary is linked to an associated audio piece by a browsable link.

Claim 10 (previously presented): The method of claim 9, further comprising rendering a given one of the audio pieces linked by a browsable link to an associated one of the audio summaries in response to user input received during rendering of the associated audio summary, wherein the rendering comprises following the browsable link from the associated audio

summary to the given audio piece before rendering a successive one of the transition audio segments.

Claim 11 (previously presented): The method of claim 1, further comprising rendering a given audio piece beginning at a location in the given audio piece linked by a browsable link to an audio summary associated with the given audio piece, wherein the rendering comprises following the browsable link from the associated audio summary to the given audio piece.

Claim 12 (original): The method of claim 11, further comprising rendering a second audio piece at a location in the second audio piece linked to a successive audio summary associated with the second audio piece.

Claim 13 (currently amended): An audio processing method, comprising:
sequentially rendering audio summaries and transition audio segments with at least one transition audio segment rendered between each pair of sequential audio summaries, wherein each of the audio summary summaries comprises digital content summarizing at least a portion of a respective associated audio piece;

receiving a user request to browse the audio summaries; and
ordering ones of the audio summaries into a sequence based on similarity in order of
audio feature vector closeness to a given one of the audio summary summaries being rendered
when the user request was received; and

rendering the sequence.

Claim 14 (original): The method of claim 13, wherein audio summaries are rendered in accordance with the ordered sequence.

Claim 15 (previously presented): An audio processing method, comprising:
sequentially rendering audio summaries and transition audio segments with at least one transition audio segment rendered between each pair of sequential audio summaries, wherein each audio summary comprises digital content summarizing at least a portion of a respective

associated audio piece, wherein each audio piece is associated with multiple audio summaries and a single audio summary is rendered automatically for each audio piece; and

rendering an audio summary for a given audio piece in response to user input received during rendering of a preceding audio summary associated with the given audio piece.

Claim 16 (original): The method of claim 1, further comprising normalizing audio summaries to a common loudness level.

Claim 17 (currently amended): An audio processing system, comprising a rendering engine operable to perform operations comprising:

identify identifying audio summaries of respective audio pieces, wherein each of the audio pieces is associated with respective ones of audio summaries ranked into different levels of a respective audio summary hierarchy and in the identifying the rendering engine is operable to identify the respective levels into which the audio summaries are ranked;

determine determining transition audio segments each comprising a form of audio content that is different from the audio summaries and distinguishes the transition audio segment from the audio summaries;

concatenating concatenate the transition audio segments and ones of the audio summaries ranked at a selected level of the audio summary hierarchies and the transition audio segments into a sequence in which at least one of the transition audio segments is between sequential ones of the audio summaries; and

render rendering the sequence.

Claims 18-38 (canceled)

Claim 39 (previously presented): The method of claim 1, further comprising following links between multiple ones of the audio summaries and one of the audio pieces.

Claim 40 (previously presented): The method of claim 1, wherein each of the transition audio segments corresponds to a monotone sound.

Claim 41 (previously presented): The method of claim 1, wherein the rendering comprises rendering the audio summaries and the transition audio segments consecutively without any gaps between the audio summaries and the transition audio segments.

Claim 42 (previously presented): The method of claim 1, further comprising, in response to user input during rendering of a current one of the audio summaries that comprises digital content summarizing at least a portion of a given one of the audio pieces, rendering another audio summary in a hierarchical cluster of audio summaries each of which comprises digital content summarizing at least a portion of the given audio piece, wherein the hierarchical cluster includes the current audio summary.

Claim 43 (previously presented): The method of claim 1, further comprising receiving one or more user-specified categories for respective ones of the audio summaries while the audio summaries and the transition audio segments are being rendered.

Claim 44 (previously presented): The method of claim 43, further comprising building one or more playlists based on the one or more user-specified categories.

Claim 45 (previously presented): The method of claim 1, wherein at least one of the audio summaries is associated with a pointer to a location in a respective one of the audio pieces.

Claim 46 (previously presented): The method of claim 1, further comprising following a pointer from a given audio summary being rendered to a location in an associated audio piece specified by the pointer, and rendering the associated audio piece beginning at the specified location.

Claim 47 (previously presented): The method of claim 46, further comprising terminating the rendering of the associated audio piece and resuming the sequential rendering of the audio summaries and the transition audio segments.

Claim 48 (previously presented): The method of claim 47, wherein the terminating is initiated in response to user input.

Claim 49 (previously presented): The method of claim 47, wherein the terminating is initiated in response to completion of the rendering of the associated audio piece.

Claim 50 (previously presented): The system of claim 17, wherein the rendering engine is operable to assign user-specified categories to respective ones of the audio pieces in response to user input.

Claim 51 (previously presented): The system of claim 50, wherein the rendering engine is operable to build a playlist based on the user-specified categories assigned to the ones of the audio pieces.

Claim 52 (currently amended): An audio processing system, comprising:
a rendering engine operable to sequentially render audio summaries and transition audio segments with at least one transition audio segment rendered between each pair of sequential audio summaries, wherein each of the audio summaries comprises digital content summarizing at least a portion of a respective associated audio piece and, in response to receipt of a user request to browse the audio summaries, the rendering engine is operable to order ones of the audio summaries into a sequence in order of audio feature vector closeness to a given one of the audio summaries being rendered when the user request was received and to render the sequence based on similarity to a given audio summary.

Claim 53 (previously presented): The system of claim 52, wherein the rendering engine is operable to render the audio summaries in accordance with the ordered sequence.

Claim 54 (previously presented): An audio processing system, comprising:

a rendering engine operable to sequentially render audio summaries and transition audio segments with at least one transition audio segment rendered between each pair of sequential audio summaries, wherein each audio piece is associated with multiple audio summaries, the rendering engine is operable to render a single audio summary automatically for each audio piece, and the rendering engine additionally is operable to render an audio summary for a given audio piece in response to user input received during rendering of a preceding audio summary associated with the given audio piece.

Claim 55 (previously presented): The system of claim 17, wherein the rendering engine is operable to render the audio summaries and the transition audio segments consecutively without any gaps between the audio summaries and the transition audio segments.

Claim 56 (previously presented): The system of claim 17, wherein the rendering engine is operable to receive one or more user-specified categories for ones of the audio summaries while the audio summaries and the transition audio segments are being rendered.

Claim 57 (previously presented): The system of claim 56, wherein the rendering engine is operable to build one or more playlists based on the one or more user-specified categories.

Claim 58 (previously presented): The system of claim 17, wherein the rendering engine is operable to follow a pointer from a given audio summary being rendered to a location in an associated audio piece specified by the pointer, and rendering the associated audio piece beginning at the specified location.

Claim 59 (previously presented): The system of claim 58, wherein the rendering engine is operable to terminate the rendering of the associated audio piece and resume the sequential rendering of the audio summaries and the transition audio segments.

Claim 60 (currently amended): The method-system of claim 17, wherein each transition audio segment corresponds to a monotone sound.

Applicant : Tong Zhang et al.
Serial No. : 10/611,449
Filed : July 1, 2003
Page : 11 of 21

Attorney's Docket No.: 100202720-1
Amendment dated Feb. 14, 2008
Reply to Office action dated Nov. 15, 2007

Claim 61 (previously presented): The method of claim 1, wherein the rendering comprises rendering only one transition audio segment between each sequential pair of the audio summaries.

Claim 62 (previously presented). The method of claim 1, wherein the identifying comprises identifying the audio summaries of the audio pieces based on links between the audio pieces and respective ones of the audio summaries.